

Robotics Service Bus - Enhancement #540

Scope comparison still expensive

09/03/2011 09:32 PM - Anonymous

Status:	Closed	Start date:	09/03/2011
Priority:	Normal	Due date:	
Assignee:	S. Wrede	% Done:	40%
Category:	Performance Optimization	Estimated time:	2.00 hours
Target version:	rsb-0.10		

Description

Scope comparison proved to be still expensive, when profiling RSB in some examples. Strategy for implementation:

1. Per-participant caching of Scope objects and referencing of this Scope object via shared pointers, e.g., in notifications. This is necessary as otherwise Event notifications that are kept longer than the lifetime of a participant would contain invalid references. The expectation is that after this change the caching operation will eventually be effective.
2. Interning across different participants in the same process.

A further performance improvement could be to replace the stringbuffer construction of the Scope string with a strcpy variant.

Associated revisions

Revision 7048b49f - 09/05/2011 05:49 PM - S. Wrede

better handling of Scopes in Informers, refs #540

Revision 872bd51f - 09/05/2011 06:55 PM - Arne Nordmann

Performance improvements in toString:

- Return scopestring and components as reference
 - Faster creation of scopestring
- refs #540

Revision bb2af9a5 - 09/29/2011 11:51 AM - J. Wienke

make the scope ptr optimization backwards compatible by introducing a separate method getScopePtr with the new semantics.

refs #540

History

#1 - 09/03/2011 09:48 PM - J. Moringen

It probably depends on the particular usage patterns, but maybe the concept of [interning](#) could be used: if creation is (or can be made into) an infrequent operation, equality comparison would reduce to a single pointer comparison.

This technique is already used in cl-rsb when scopes are used as keys in associative containers.

#2 - 09/05/2011 11:07 AM - S. Wrede

- Category changed from C++ to Performance Optimization

#3 - 09/05/2011 11:32 AM - S. Wrede

Also check that the copy constructor actually copies the cache object.

#4 - 09/05/2011 03:53 PM - S. Wrede

- *Description updated*
- *Assignee set to S. Wrede*
- *Target version set to rsb-0.10*
- *Estimated time changed from 1.00 to 2.00*

#5 - 09/05/2011 06:21 PM - S. Wrede

- *% Done changed from 0 to 40*

Event now stores a ScopePtr (currently a shared_ptr). The participant's ScopePtr is now copied when new Events are constructed upon call to publish. Added also some convenience functions to work with scope values in Event.h.

#6 - 05/10/2012 03:52 PM - J. Wienke

Is there any reason that this issue is still open?

#7 - 09/30/2013 08:55 AM - J. Moringen

- *Status changed from Feedback to Closed*

Reopen if this problem surfaces again.